

From wang!elf.wang.com!ucsd.edu!info-hams-relay Fri Apr 5 17:30:18 1991 remote
from tosspot
Received: by tosspot (1.64/waf)
via UUCP; Fri, 05 Apr 91 23:00:05 EST
for lee
Received: from somewhere by elf.wang.com id aa00953; Fri, 5 Apr 91 17:30:17 GMT
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(5.61/UUNET-shadow-mx) id AB04496; Fri, 5 Apr 91 09:59:14 -0500
Received: by ucsd.edu; id AA11109
sendmail 5.64/UCSD-2.1-sun
Fri, 5 Apr 91 04:30:35 -0800 for brian
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sendmail 5.64/UCSD-2.1-sun
Fri, 5 Apr 91 04:30:26 -0800 for /usr/lib/sendmail -oc -odb -oQ/var/spool/
lqueue -oi -finfo-hams-relay info-hams-list
Message-Id: <9104051230.AA11096@ucsd.edu>
Date: Fri, 5 Apr 91 04:30:24 PST
From: Info-Hams Mailing List and Newsgroup <info-hams-relay@ucsd.edu>
Reply-To: Info-Hams@ucsd.edu
Subject: Info-Hams Digest V91 #270
To: Info-Hams@ucsd.edu

Info-Hams Digest Fri, 5 Apr 91 Volume 91 : Issue 270

Today's Topics:

Iambic?

SOLAR TERRESTRIAL BULLETIN - FLARE IMPACT EXPECTED

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 5 Apr 91 11:20:07 GMT
From: news-mail-gateway@ucsd.edu
Subject: Iambic?
To: info-hams@ucsd.edu

If an iambic keyer always sends an element at end of a character, of the
opposite sense to the one you've just sent, e.g. *you* send dah-di-dah and *it*

tags on another dit to make a 'C', then how do you send characters that end in two elements the same, like an 'L', or 'G'???

Hugh, GOCNR.

Date: 3 Apr 91 19:29:00 GMT
From: news-mail-gateway@ucsd.edu
Subject: SOLAR TERRESTRIAL BULLETIN - FLARE IMPACT EXPECTED
To: info-hams@ucsd.edu

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SOLAR TERRESTRIAL BULLETIN

03 April, 1991

Flare Impact Assessement Update

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UPDATED FLARE IMPACT ASSESSMENT

The major class M6/2B flare of 02 April did manage to eject protons. Protons passed event thresholds of 10 pfu at greater than 10 MeV at 08:15 UT on 03 April. Protons reached a tentative peak of 25 pfu at 09:10 UT and have since declined to around 18 pfu as of 18:30 UT.

We are currently expecting a terrestrial impact from this latest flare. With the proton event now in progress, models are indicating a moderate to high probability for a terrestrial impact. The geomagnetic field is expected to become more active on 04 April. Activity will most likely reach at least minor storm levels. Models are suggesting an estimated A-index value of about 35 to 40 for 04 April, falling to about 25 on 05 April. There is a chance activity could be higher than predicted. There is also a chance that no impact will occur at all. However, considering all aspects of this flare, a terrestrial impact is now expected. The geomagnetic storming (if it occurs) should begin somewhere near 18:00 UT on 04 April (give or take several hours). There was no Type II sweep observed with this event (which does not necessarily mean there wasn't a Type II which occurred), so we are leaning slightly towards a gradual storm commencement rather than an SSC type magnetic signature. But either is possible.

Auroral activity over high latitudes will reach high levels if this disturbance materializes. Some periods of major magnetic storming are possible over middle and high latitudes (particularly high latitudes).

Middle latitudes will likely witness mostly moderate auroral activity with a risk for brief periods of high auroral activity. Since lunar phase will not interfere with attempts to view auroral activity, some southerly middle latitude areas may be able to witness low levels of auroral activity far to the north or northeast. It will be difficult, however, to spot auroral activity with the naked-eye that far south.

HF propagation conditions should become somewhat degraded on 04 April if a terrestrial impact materializes as expected. Conditions are already degraded more than usual due to the enhanced geomagnetic and auroral activity which has been observed lately. A further decrease in the quality of propagation is expected on 04 April over most latitudes. However, no blackout conditions are expected for the middle and low latitudes. This storm event (if it occurs) will not be nearly as powerful as the last major geomagnetic storm event which occurred in March.

VHF propagation conditions will remain mostly normal to below normal on 04 April. Middle and high latitudes may experience periods of auroral backscatter communications, particularly in the late afternoon and near local midnight. The extent of the auroral communications will depend on the magnitude of the geomagnetic activity. If activity reaches levels currently expected (A-index of 35), no significant widespread auroral backscatter will likely be observed. However, local sporadic auroral backscatter will be possible over the middle latitudes if magnetic activity reaches these levels. More common auroral propagation will occur over the northerly middle and high latitudes.

A POTENTIAL GEOMAGNETIC STORM WARNING has been issued for 04 April. This recent flare combined with the coronal-induced magnetic activity should push the geomagnetic field into low to moderate intensity minor storming. Conditions should improve somewhat on 05 April, although a return to more quiet levels is not expected for several days.

PLEASE SEND ANY REPORTS OF AURORAL ACTIVITY, AURORAL BACKSCATTER COMMUNICATIONS, HF DEGRADATION OR OTHER ANOMALIES TO: OLER@HG.ULETH.CA. PLEASE INCLUDE THE TIME (UT AND LOCAL), LOCATION OF OBSERVATION AND A SHORT DESCRIPTION OF THE PHENOMENA OBSERVED. THANKS TO ALL THOSE WHO TAKE THE TIME TO SEND IN REPORTS.

The following alerts are IN PROGRESS:

- SATELLITE PROTON EVENT ALERT (CURRENT LEVEL: 16 PFU @ > 10 MEV @ 1830 UT)
- PROTON FLARE ALERT (02 APRIL)

The following warnings are IN PROGRESS:

- POTENTIAL GEOMAGNETIC STORM WARNING (FOR 04 APRIL)
- POTENTIAL POLAR CAP ABSORPTION EVENT WARNING (40% PROBABILITY)

- POTENTIAL POLAR TO HIGH LATITUDE HF SIGNAL BLACKOUT WARNING (30% PROB)
- POTENTIAL MAJOR SOLAR FLARE WARNING

** End of Bulletin **

Date: 3 Apr 91 18:05:04 GMT
From: pacbell.com!att!emory!wa4mei!ke4zv!gary@ucsd.edu
To: info-hams@ucsd.edu

References <1991Mar29.005013.29370@ux1.cso.uiuc.edu>, <2646@ke4zv.UUCP>,
<1991Apr2.071321.27899@ux1.cso.uiuc.edu>
Reply-To : gary@ke4zv.UUCP (Gary Coffman)
Subject : Re: ATV: AM or FM

In article <1991Apr2.071321.27899@ux1.cso.uiuc.edu> phil@ux1.cso.uiuc.edu (Phil Howard KA9WGN) writes:

>gary@ke4zv.UUCP (Gary Coffman) writes:

>

>>Once you drop below the FM threshold, the signal does degrade very rapidly.
>>But get just a little above the threshold and the picture gets about as
>>good as it can get. Also, modern phase locked loop detectors can really
>>dig down in the noise. Usable broadcast pictures can be had with a C/N of
>>only 3 db. With a good receiver such as the Harris you'd have a 30 db
>>picture signal to noise ratio with a 3 db C/N, that's good enough for a
>>news live shot. I'd like to see usable AM pictures that weak.

>

>Where would the break even point be between AM and FM in terms of picture
>quality for the same signal strength and bandwidth?

This is tough to say. Down at the threshold, FM requires 1/8 the power of VSB AM to have the same picture quality. Below the threshold, there are too many variables to put a hard number to the crossover point where VSB AM becomes better than FM.

>I am interested in doing things with VERY WEAK TV signals. I am talking
>about so weak that visually they appear to be just P0, you MIGHT be able
>to tell there is a sync bar in there sometimes.

Under those conditions, VSB AM will hold an edge, but when you want usable pictures rather than just detecting that something is there, FM will win.

>To whatever extent the noise or interference mimics phase change components
>in the signal (for instance adding two sine waves 90 degrees apart, equal
>strength causes a 45 degree phase shift, lesser shifts for lesser amounts)

>even the best phase lock loop cannot improve the signal because it would
>need to have some way to know what is signal and what is noise to do that.

The TV picture modulation is highly redundant, especially in the sync region. This gives a coherent pattern in the modulation that is rather easy to lock on to. Therefore the loop constants in the detector can be optimized for the expected signal. This is a big advantage over the more random FM voice modulation we are familiar with. A well designed FM TV receiver will will outperform the diode detector in AM schemes by a substantial margin.

>>By the way, all these TV news remote trucks you see scurrying about use
>>FM microwave links too. Our trucks use 10 watt transmitters in the 2 Ghz
>>range and we get routine link range of at least 50 miles. The trucks
>>use 50 foot pneumatic masts mounting 14 db gain circular polarized antennas.
>>Note that the 10 watt signal has to travel through about 60 feet of RG9
>>to reach the antenna. That's about 12 db loss at 2 Ghz.

>

>And how much gain is at the receiving end? 50 miles is easy to do in a
>flat area or any other radio line of sight situation.

We use 7 db horns for receive facing NSEW with remote switching. Our terrain is anything but flat. Many of our shots require a "bounce" off a tall building or mountain to work. This is where circular polarization really pays off. The polarization sense reverses with each reflection. By selecting which polarization we use, we get up to 30 db rejection of the unwanted signal.

>afford them (1975). The genlock of the time either genlocked everything
>(color, horizontal, vertical) or nothing. I would have liked to have seen
>a genlock that would have locked the color only, leaving the horizontal
>and vertical in the phase it found them. Optionally it could run the color
>slightly off for a while to SLOWLY bring the frame into sync without any
>glitches. I never saw such a thing made.

There is a standard called RS170A that we have to adhere to for color transmission. It specifies a very tight and very specific timing relationship between all of the timing signals in a TV waveform. Basically the color subcarrier must be phased so that it is at zero crossing, heading in a positive direction at the 50% point of the rising edge of horizontal sync on line 10 of field two. This allows precise color framing for electronic editing and switching. Unless this specification is rigidly adhered to, there will be horizontal shifts or hue changes at switch points.

>Then I guess we will need to lock to something else. I wonder if you can
>get a 3.579 MHz out of a scrambled satellite picture? Are there any
>non-scrambled ones left? Would there be too much phase wobble from the
>satellite to work very well?

There is quite a bit of phase wobble in satellite signals. It's fun to watch your uplink coming back from the bird and see the vectorscope spin first one way then the other. There are still quite a few unscrambled feeds on the Ku band birds. Most of this is backfeed material and is referenced to the crystal oscillator in the remote truck, usually really unstable compared to a crystal oscillator in a more benign studio environment.

Gary KE4ZV

End of Info-Hams Digest
